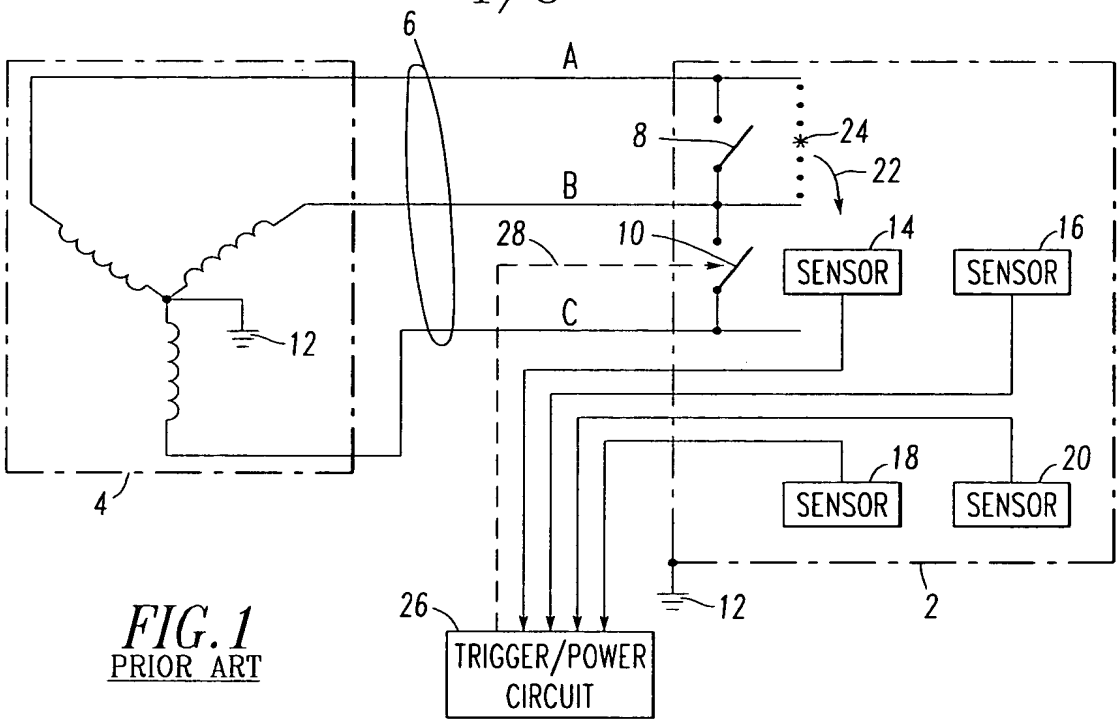

FIG. 1
PRIOR ART

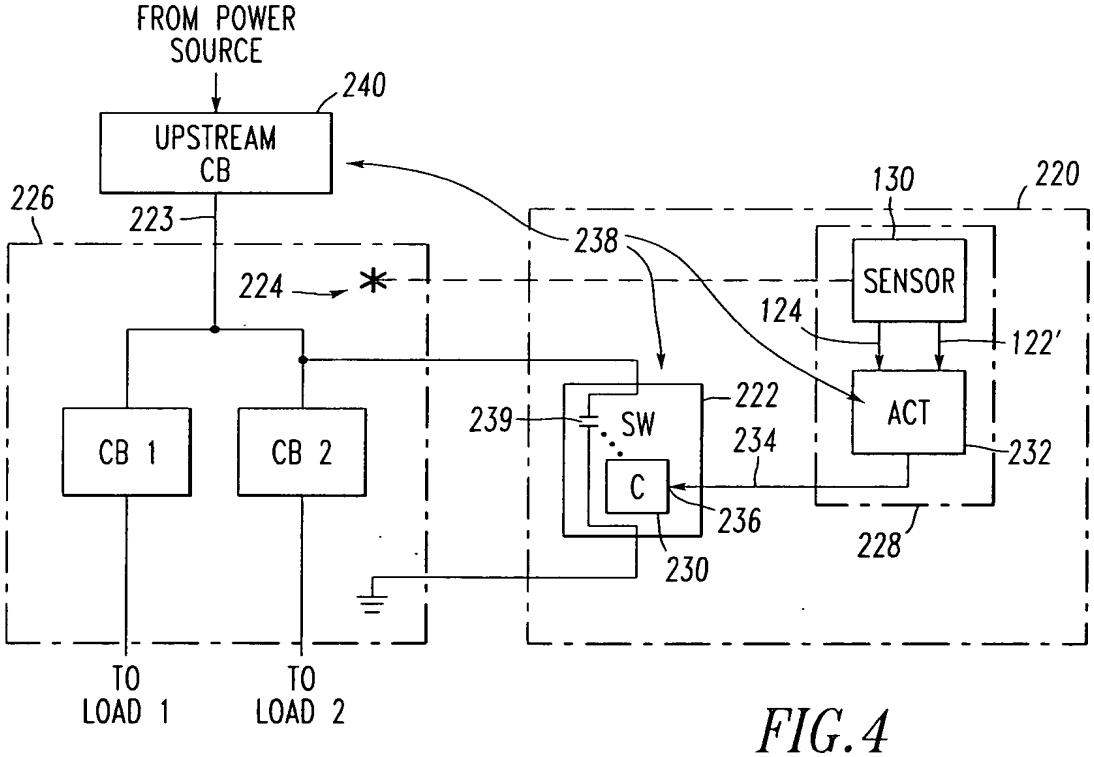

FIG. 4

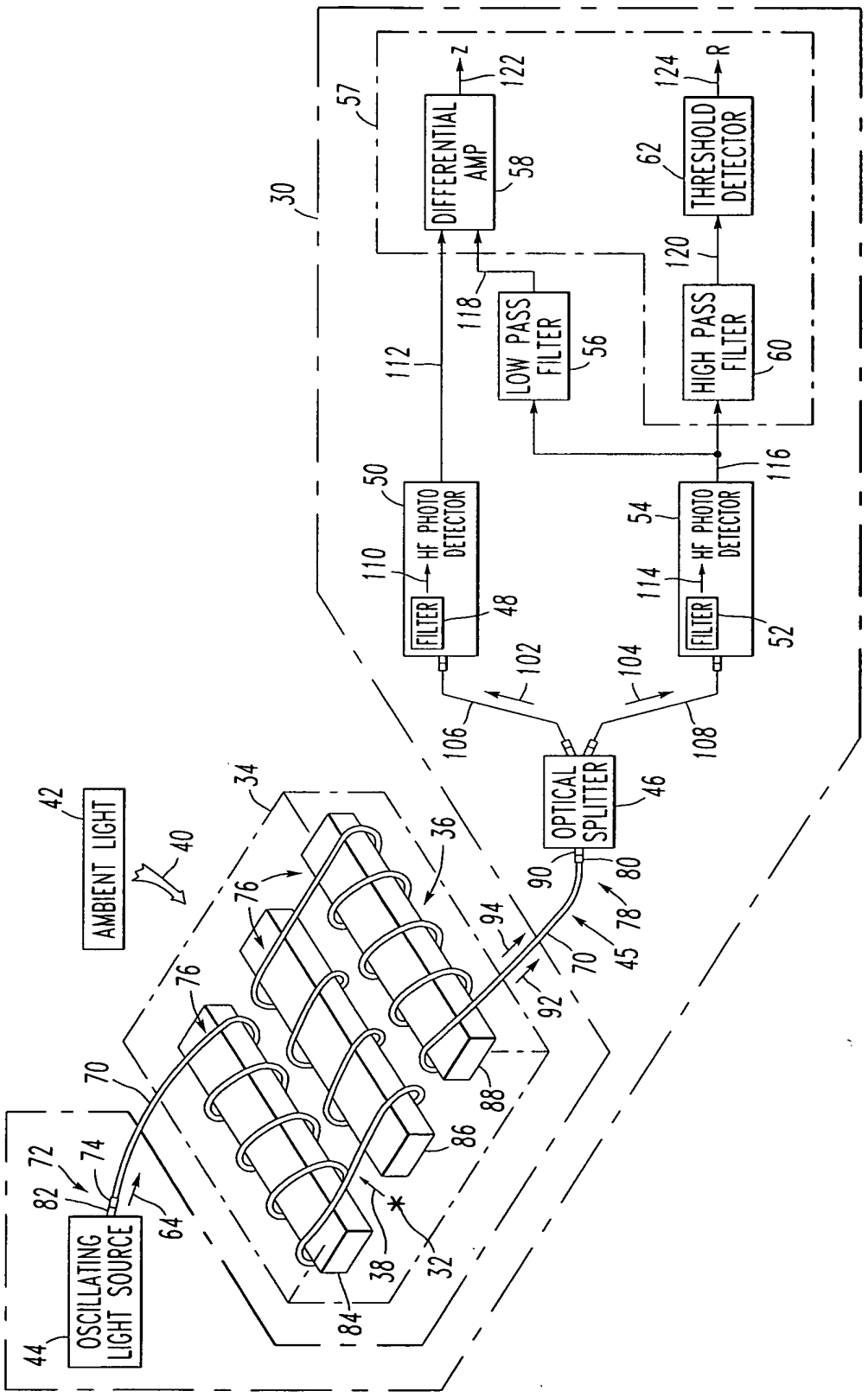
OSCILLATING LIGHT SOURCE
AMBIENT LIGHT
OPTICAL SPLITTER
HF PHOTO DETECTOR
FILTER
DIFFERENTIAL AMP
LOW PASS FILTER
HIGH PASS FILTER
THRESHOLD DETECTOR
30
32
34
36
38
40
42
44
45
46
48
50
52
54
56
57
58
60
62
64
70
72
74
76
78
80
82
84
86
88
90
92
94
102
104
106
108
110
112
114
116
118
120
122
124
Z
R

FIG.2

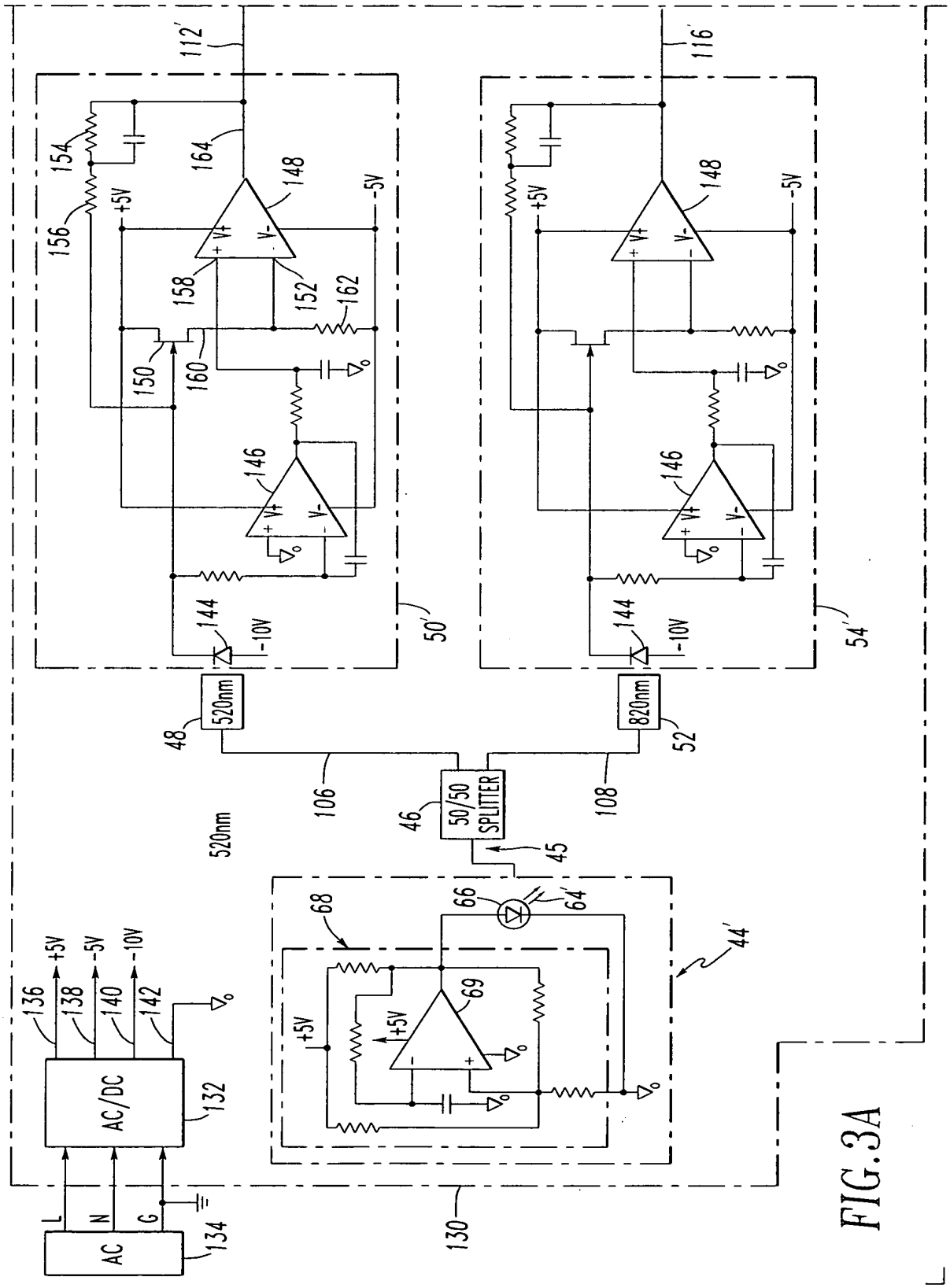
112'
116'
154
156
164
148
+5V
-5V
158
152
162
150
160
146
144
-10V
50'
54'
48
520nm
820nm
52
106
108
46
50/50 SPLITTER
45
520nm
68
66
64'
44'
69
+5V
136
138
140
142
-10V
AC/DC
132
L
N
G
AC
134
130

FIG.3A

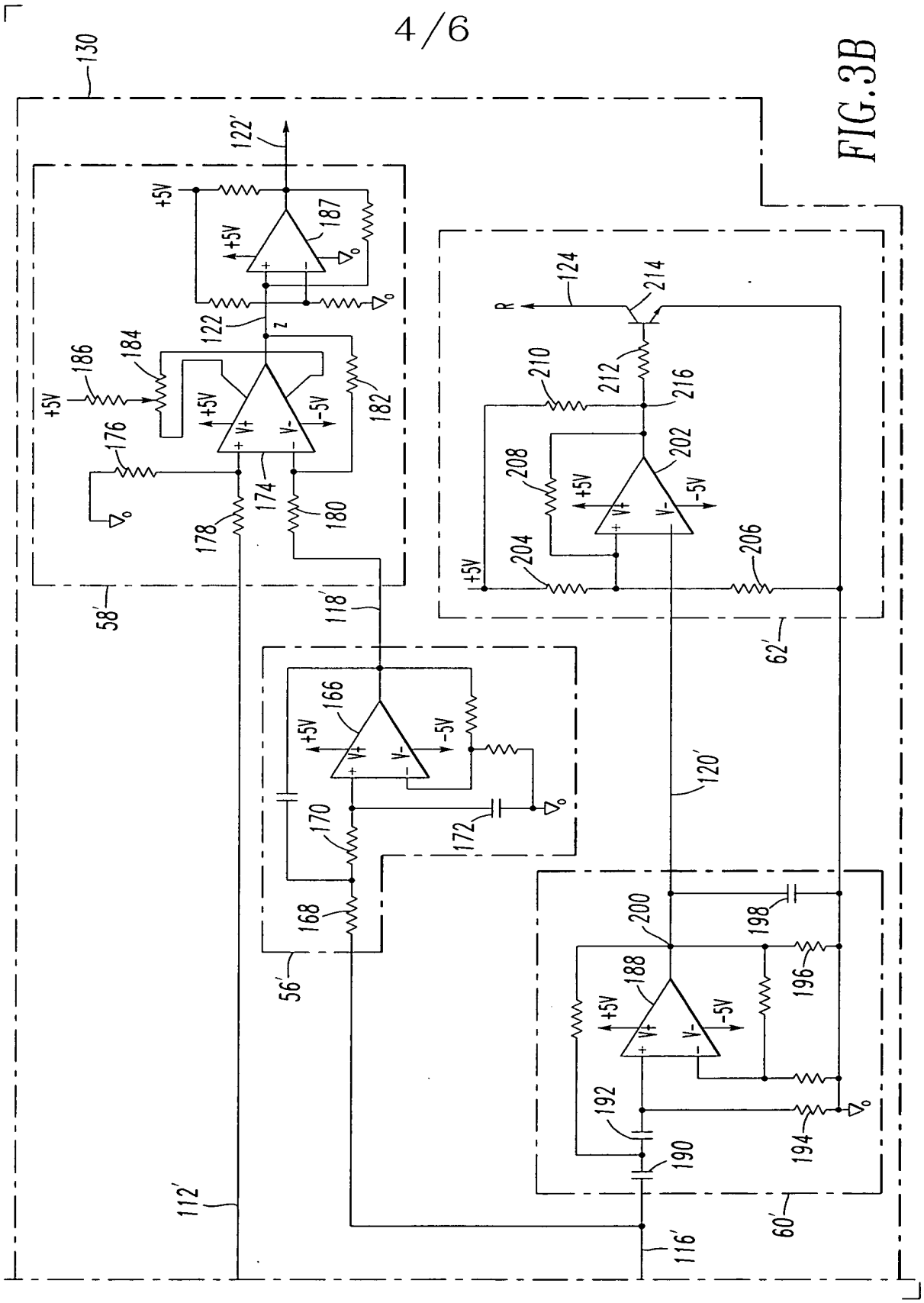
130
122'
+5V
187
122
Z
184
186
182
176
174
180
178
58'
118'
166
170
172
168
56'
120'
124
R
214
210
212
216
202
208
204
206
62'
200
198
188
196
192
194
190
112'
116'
60'

FIG.3B

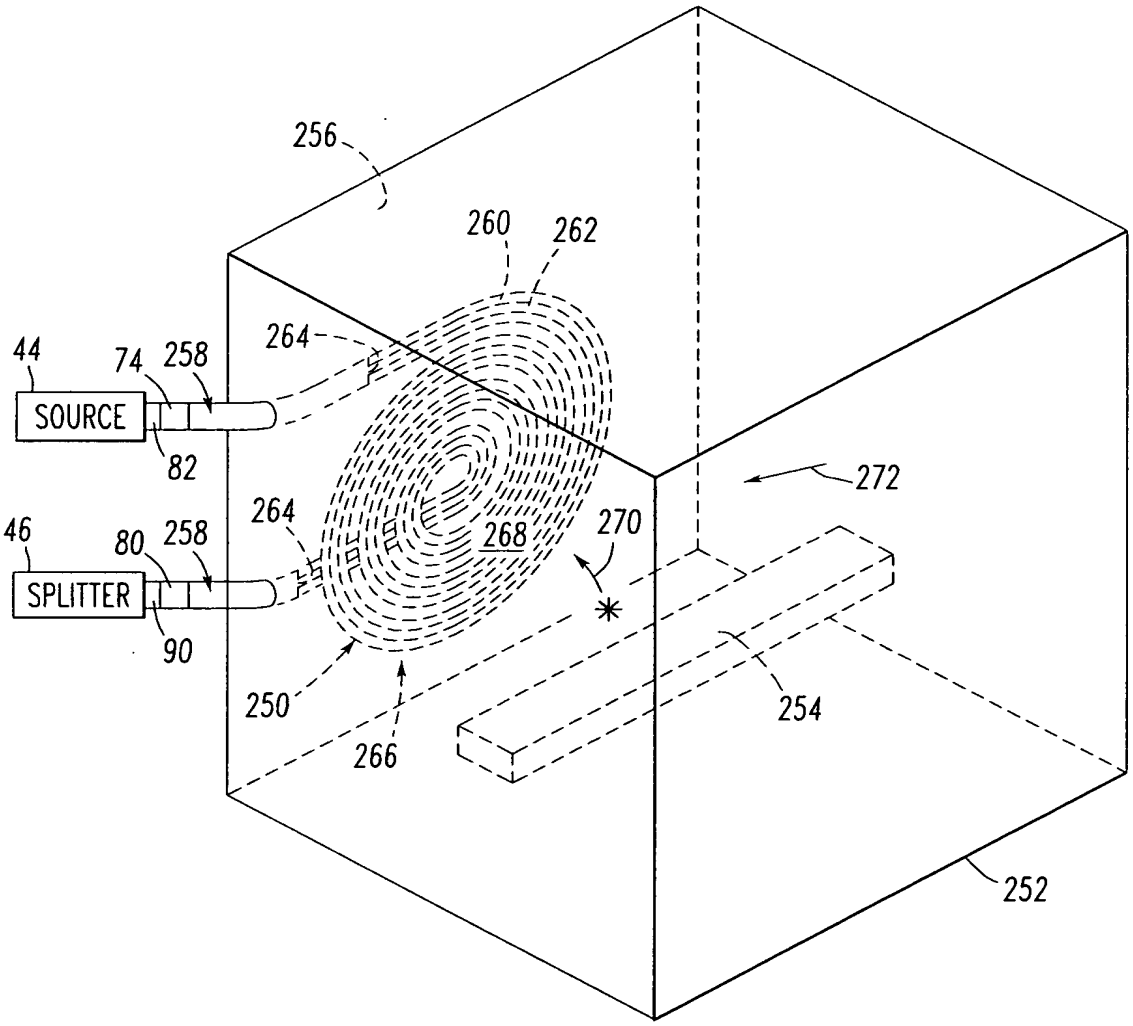
256
260
262
264
44
74
258
SOURCE
82
46
80
258
SPLITTER
90
264
268
270
272
250
266
254
252

FIG.5

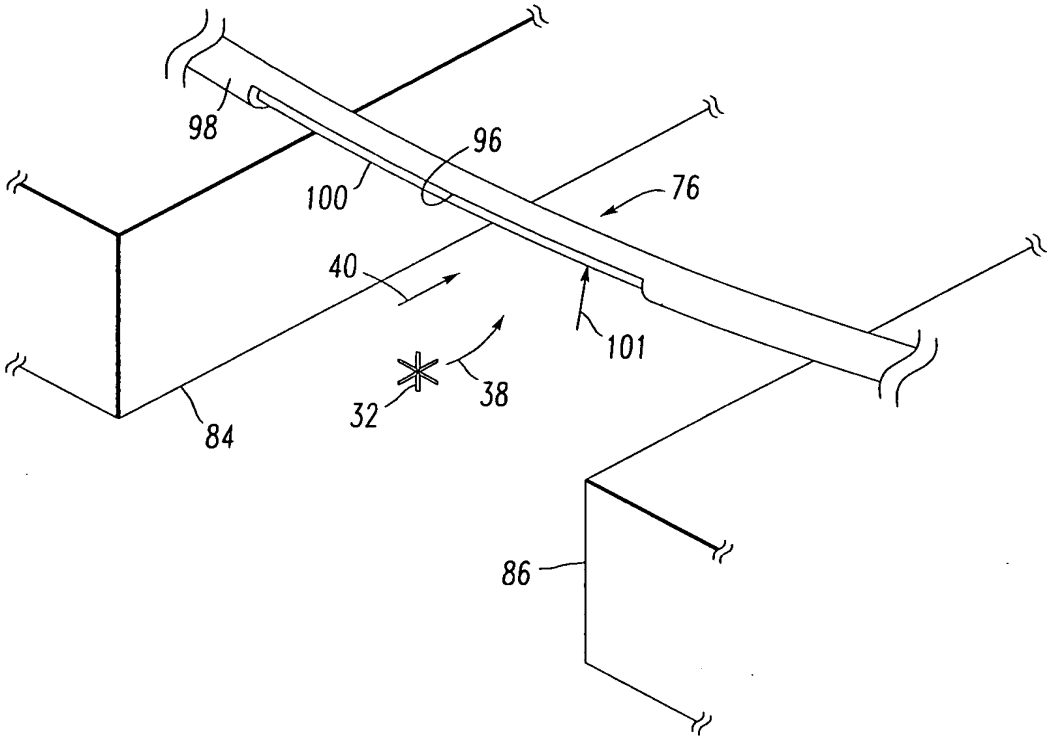

FIG. 6